10-1983

WINTERING ROBINS AFFECT BLACKBIRD ROOST DISPERSAL

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ABSTRACT

The numbers of blackbirds wintering in the north central Texas city of Denton appear to be increasing. Unusually large numbers of American robins *(Turdus migratorius)* in 1981-82 obstructed effective roost dispersal. Dispersal methods and procedures are described. Data are given on species composition, sex ratios, mean weights, and weight range for 2,781 birds taken January 29, 1982. Species composition and ratios are given for an additional 1,540 birds taken the following day. Current blackbird dispersal techniques are ineffective if large numbers of wintering robins are commingling with the blackbirds.

INTRODUCTION

Numbers of blackbirds wintering in Denton, Texas and on the Texas Woman's University (TWU) campus have been increasing. During the winter of 1981-82, there were two major roosts of 50,000 each in mid-November. One was on the TWU campus and the other was located in a one-block residential area 1.5 miles northeast of campus. By December and early January, there were over .5 million birds at each of these sites. The mixed flocks were composed of common grackles *(Quiscalus quiscula)*-60%; European starlings *(Sturnus vulgaris)*-25%; brown-headed cowbirds *(Molothrus ater)*-10%; and red-winged blackbirds *(Agelaius phoeniceus)*-5%. My estimates for percentages of species agreed with those for winter roost populations in Kentucky and Tennessee (Department of Army, 1975). Grackles were the dominant species in roosts from these states and Texas. In progressively decreasing importance were starlings, cowbirds and red-winged blackbirds. The latter, however, reached 25% of the total roost in Kentucky and Tennessee.

North Texas was inundated by unusually large numbers of American robins *(Turdus migratorius)* during the winter of 1981-82. Although there were robins scattered throughout the city of Denton, at least 1,000 of them roosted with the estimated 50,000 blackbirds at each site when the roosts were initially described in November 1981.

Coordinated dispersal efforts began in December 1981 and continued for the next two months. The methods and procedures used were described in a booklet on urban blackbird roost control available through the author (Erdman, 1981a). Mott (1980) has also reviewed the current methods and procedures pertaining to roost dispersal. Campus personnel worked the 40.5 ha. roost of the University while City of Denton Animal Control personnel concentrated on the roost of one city block (approximately 12 ha.). Simultaneous roost dispersal efforts in both areas kept large numbers of birds moving from these two trouble spots. Nonetheless, flocks of blackbirds continued to choose both sites nightly.

Methods usually successful for roost dispersal (alarm and distress calls, bird bombs, early morning harassment and disruption of incoming flights) were not effective. Perhaps this was due to an influx of new arrivals which replaced those thousands we had dispersed. A more plausible reason for our unsuccessful attempts was the presence of large numbers of robins which also used these roost sites. The robins did not respond to the methods used. It was obvious that they were acting as decoys for the

blackbirds as indicated by Frings (1967). Garrity and Pearce (1973) found that radio-controlled model aircraft would flush robins from blueberry fields. Buildings, powerlines and mature stands of trees associated with our urban roosts made this approach unfeasible.

It has been my experience with urban roosts that they tend to form in the vicinity of tall structures such as radio antennae or building towers. I suspect that the high-rise buildings on the TWU campus attract flocks of birds to roost. We could not determine whether or not the birds in Denton were attracted by these structures.

TEXAS WOMAN'S UNIVERSITY ROOST DISPERSAL PROGRAM

Roost Description

The roosting areas at TWU were scattered over the 40.5 ha campus. The major roost of the estimated 50,000 blackbirds was located in a wooded area next to the two tower dormitories. The roost trees were an assortment of Chinese elm, cedar, pecan, oak, hackberry and others. The average height was 25 feet.

Smaller roosts of 500 to 1,000 birds were located in courtyards, along the central promenade, Red Bud Lane, and in the liveoak street trees on Dormitory Row.

Dispersal Program

Two series of harassment of incoming birds were initially carried out. Each ran five consecutive evenings at sunset, with the weekends limited to observation. The first attempt to discourage the birds as the major roost developed in November was the use of shot-like noises and alarm calls broadcast from a portable sound system. This attempt failed.

The second attempt was a five-night harassment of the major roost plus the scattered roosts on the rest of the campus. The weekends were used as observation and reinforcement of the five-night effort. This attempt was only a partial success.

TWU utilized a nightly "bird patrol" using bird bombs and alarm (Wildlife Technology, P.O. Box 1061, Hollister, California 95023. Tape 455 RW Blackbird M49 and Blackbird-Grackle) and distress calls (Signal Broadcasting Company, 2314 Broadway Street, Denver, Colorado, 80205 SIG # 6414-7-C, Red-Winged Blackbird). Although red-winged blackbirds have not caused us problems thus far in north central Texas, I have found from field experience that their alarm and distress calls are more effective in eliciting responses from starlings, cowbirds and common grackles than are the alarm and distress calls of these three species. Starlings respond immediately, then cowbirds, and finally grackles. In my opinion, the common grackles respond to the behavior of the other two species, rather than to the alarm and distress calls. I have also noted that the long-tailed grackle *(Cassidix mexicanus)* which is becoming more common in this part of the country, does not respond to either the alarm calls or to the behavior of the other roosting species; however, they join these other species in our summer roosts.

Two or three shooters stationed in strategic locations were able to turn the blackbird flights. Robins came in through the bird bombs and alarm calls singly and steadily until sunset with no discernible avoidance of the area. One mobile unit covered the 40.5 ha campus with a sound system broadcasting alarm calls from amplified tapes. The calls were effective in disturbing the birds, especially if bird bombs had been used previously.

During the five-night dispersal program, two other methods were used on a limited basis and merit further trials. In the first method, alarm calls were broadcast through the 300 watt sound system in the top of the 232 foot TWU Clock Tower. The system uses eight projectors with matching drivers. The highly amplified alarm calls could be heard 1.5 miles from campus. Three shooters were on duty but fewer shells were used during the three days this method was tried. There was a definite response not only from the birds but from the citizenry as well. The birds changed their direction when they neared the campus and left the area. Citizens living near TWU objected to the loud cries, which

evidently were not as acceptable as the nightly firing of bird bombs. It would be interesting to try this approach again for a longer period of time to determine its effectiveness if public acceptance could be obtained.

In the second method, light was featured (a suggestion from Robert Remter, Health Specialist, City of Norfolk, Nebraska). We used a 6-V flashlight beam to move cowbirds, and to a lesser extent, starlings, from undesirable locations. Two hours after the birds had gone to roost, we would shine the beam of the light at the base of a roost tree and move the beam slowly up the trunk to the crown. This action would flush the roosting birds to nearby trees. With persistence we were able to shepherd the birds into trees where the fecal buildup would be more acceptable. The birds did not return to the original trees despite the campus being well lighted.

At the same time, an aggressive tree-trimming program was undertaken on campus according to the technique of Good and Johnson (1978). The dense liveoaks were opened by removing approximately one-third of the canopy. Blackbirds did not roost in these trimmed trees, but robins did.

Results of Dispersal Program at TWU

The presence of thousands of robins affected the dispersal program. Blackbirds continued to use the major roost on campus along with the robins. Tree-trimming discouraged blackbirds from roosting in the scattered roost areas around the campus, but the robins continued to create an ugly mess on the roost trees, plantings, sidewalks, and benches.

It was felt that the best that could be done was to keep on hazing the birds at sunset, reinforce this with early a.m. harassment and attempt to keep the main part of the campus as clean as possible. These efforts continued until all the roosting birds - both robins and blackbirds - departed in March.

THE CITY OF DENTON ROOST DISPERSAL PROGRAM

Roost Description

The city roost was two densely wooded sections of longleaf pine, jack oak and cedar with an understory of greenbriar, poison ivy and blackberry. Most of the trees were 25-30 feet in height. The roost occupied the north half of the 12 ha. city block. Final staging areas (tall trees and power lines) were located on all four sides of the roost within one block, thus affecting a large number of residents other than those living in the roost proper. The birds had been increasing since mid-November. The first citizen complaint was logged on December 24, 1981.

City Dispersal Program

Efforts began the last week of December 1981. Amplified alarm calls and shotlike noises were used to haze the birds for two series of five evenings each. The second series was reinforced with five early a.m. treatments when City of Denton Animal Control personnel and I flushed the roosting birds prematurely for the day. One or two bird bombs were effective in flushing the whole roost for the day.

During the second week of concerted effort, a crew of four-six city personnel armed with shotguns was stationed about four miles northeast of the roost at the city limits. They were to disrupt the regular flight lines of the birds approaching the roost. Four consecutive evenings were spent hazing incoming flights.

The situation at the city roost grew steadily worse. Since it appeared that the problem would persist as long as robins remained in the area, the City of Denton was granted a federal migratory bird depredation control permit to allow the incidental take of nontarget species, such as American robins. The Denton City Council permitted authorized personnel to discharge firearms within the city limits, and to kill depredating birds. A carefully planned and controlled shoot-to-kill campaign was undertaken. Since good public relations had to be established prior to the campaign (Erdman, 1981b), I made a

canvas of all homes in and adjacent to the roost. Our dispersal plans were thoroughly discussed with all the residents. An information leaflet was also distributed to each residence in the area (Figure 1). Since these citizens had been subjected to three months of deepening bird manure, plus the twice-daily disruption caused by the birds either arriving or departing the neighborhood, there were no objections to the campaign. On the contrary, everyone was highly supportive.

The campaign was intended to break up the objectionable blackbird roost. Non-lethal methods had failed and it was felt that live ammunition might act as a successful dispersal agent. There was no intent to kill all the birds using the roost. We hoped that a short series of shoots would break up the roost for the season.

One hour before sunrise, four teams of two shooters each were deployed at predetermined sites within the roost. Express loads of #6 shot were used to minimize the numbers of wounded birds. The first rounds were fired in unison by the four teams in case all birds flushed from the roost. Since they did not, 40 minutes were subsequently spent in sporadic shooting. Large groups of birds flushed upward, circled and returned to the same roost trees. It was not necessary to change shooting positions. While the shooting was taking place, city police patrolled the area around the roost to minimize the risk of accidents or damage.

At sunrise, city cleanup crews cleared the area of dead birds. We were interested in species, sex ratios, winter weights, and the possible presence of Fish and Wildlife serial leg bands. The birds were bagged and taken to the Animal Control Shelter where they were segregated as to species, sexed and counted except for the robins and starlings. Representative samples of all species were weighed.

On the second morning, nine shooters were used. The same precautions were taken and the same procedures followed. The weather was violent with high winds accompanying a severe electrical storm. Over 2.25 inches of rain fell during the one-hour shoot and turned the accumulated bird manure into a slippery and sticky coating on the roost trees and underfoot. Only data on species and numbers were taken because all the birds were sodden and many coated with manure which made taking of other parameters unreliable.

Despite the fact that many hundreds of robins were roosting in the same area, it was possible to avoid shooting them in most cases. Robins are much more loosely organized socially than blackbirds; that is, each robin maintains and defends a distance around itself. All the robins that I observed in our winter roosts kept two or more feet between themselves and the next robin. They would allow other species to roost closer than this, but not other robins. When incoming robins invaded the territory of roosting robins, there were frequent squabbles and chases. Furthermore, robins chose the lower levels of the trees in which to roost and we could adjust the angle of fire to avoid hitting most of them.

When a roost is dispersed with live ammunition, some birds are wounded. This requires extra time and effort for cleanup. Due to the dense underbrush in the roost and the many hiding places under structures in the neighborhood, we took a week to dispose of approximately 200 birds wounded in the two days of shooting.

We continued to harass the blackbirds for the next two weeks. Our routine was to begin at the roost site about one hour before sunset, then move outward in widening circles from the roost. We used a Denton City Animal Control vehicle equipped with warning lights since we were moving slowly and stopping frequently.

The portable sound system was plugged into the truck cigarette lighter. The *Powerhorn* was placed in the rear of the truckbed. The tape player and amplifier were placed either on the dashboard or on the seat of the cab. Specifications of the system are: Sony *Stereo Cassette-Corder,* Tc-520CS; amplifier, *Realistic* Solid State P.A. MPA-20, 120V/12V; and horn, *Realistic* 12 inch *Powerhorn,* 40-1238C, 8 ohms, 25 watts. The bird bombs were discharged from the truckbed or from the cab.

Results of the City Dispersal Effort

Initial efforts using alarm calls, shot-like noises and bird bombs did not work. Roosting blackbirds would flush but then be drawn back to the roost by the large numbers of robins already there. Early morning disruption, which I found effective with blackbirds, was not effective with robins. When robins were not associated with our summer roosts, I was able to move various roosts eastward using the early a.m. hazing alone.

Disruption of incoming flights resulted in two changes in the birds' behavior. The four-day disruption caused them to approach at higher levels than before and to split their flights in the area of the shooters by turning 90° either to the east or west for two miles; they again formed into large flocks headed for their final staging areas in the neighborhood of the roost.

The two-day shoot-to-kill campaign was effective in breaking up the roost. The estimated numbers of blackbirds dropped from 0.5 million to an estimated 2,000 cowbirds which continued to share the roost with the original number of robins.

During the two mornings of the shoot, we observed that robins did not respond to the shotguns being fired at close range. The blackbirds would disperse from the roost trees, circle and return: The robins not only stayed in the roost trees, but also continued their early morning caroling throughout the shooting.

The few cowbirds (292) taken were probably due to their sharing the lower portions of the roost trees with the robins. There was no friction noted between these two species in our winter roosts. The cowbirds roosted in close groups with robins interspersed among them. There was also some evidence that the blackbirds were roosting in groups of varying species within the roost. Robertson et al. (1976) noted the possible bias inherent in sampling blackbird roosts by shooting.

Analysis of the first day bird take as to species, sex, number and weights of the birds are given in Table 1. The weights were 5 to 10 g less than those for the Kentucky and Tennessee birds (Dept. of Army, 1975). In those birds which were sexed, the females were consistently lighter in weight than were the males; however, the ranges of weight overlapped such that weight is not a reliable parameter of sex.

The common grackle and starling represented 54% and 42%, respectively, of the total roost; cowbirds, red-winged blackbirds and robins were found in lesser numbers. Although robins constituted only 0.7% of the roost, they were most important in making the roost dispersion technique ineffective.

On the second day of the bird take, approximately half the numbers of birds were taken (Table 2, columns 4 and 5) compared to day one. The common grackle and starling were again the predominant species. Although species totals were different for the two days, the proportions were comparable. There was a 50% drop in the percents of starlings and red-winged blackbirds taken, while the grackles and cowbirds increased by about 10%. The take of robins remained about the same. These differences might indicate either 1) the possible bias inherent in placement of shooting stations within the roost; 2) the angle of shot; and/or 3) differential sensitivity to shooting pressure of the species roosting.

Although not noted in the data, several of the 39 robin carcasses collected were already decaying. This probably represents natural mortality for wintering robins. It also reflects the thorough efforts made by the cleanup crews.

Evening hazing continued for the next two weeks (five weekdays for hazing, weekend for observation). The mobile sound unit and one or two bird bomb shooters were able to turn any incoming flights. The amplified alarm calls alone were usually enough to turn the blackbirds. Bird bombs were discharged sparingly. Neither of these noises had noticeable effects on robins. Large numbers of them continued to use the roost nightly, joined by small flocks (20-40 per tree) of cowbirds. The grackles, starlings and the major share of the other wintering cowbirds dispersed over the city in flocks of 50-200 birds. During the first two weeks of March 1982, the remaining flocks dispersed.

CONCLUSIONS

In retrospect, species composition of winter blackbird roosts is of prime importance. If large numbers of robins are sharing a blackbird roost, the non-lethal and generally successful dispersal methods are likely to fail. Rather than dispersal, the problems created by many birds in a confined, urban area are merely diminished. An aggressive tree-trimming program can also be recommended.

More emphasis should be placed on the search for bird vocalizations which elicit definite responses in those species which create continuing problems. Those of us working in the field of urban bird roosts employ methods which control rather than manage roosts. I look forward to the discovery of biologically-produced sounds which can be used to manage large concentrations of birds in our urban areas.

ACKNOWLEDGEMENTS

I am grateful to Dr. H. E. Erdman for his assistance in editing this manuscript. The support of the Texas Woman's University and the City of Denton, Texas is also deeply appreciated.

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TABLE 1. Species, sex, numbers and representative weights (g ± S.E.) of birds taken the first day at a blackbird roost in Denton, Texas on January 29, 1982 at 0630 hours.

Species	Sex	No. Collected	% of Total	No. weighed	Mean Weight (g ± S.E.)	Weight Range (g)
Common grackle	♂	744		53	112.9 ± 1.2	89.9-130.9
	♀	746		47	92.0 ± 1.1	78.6-111.5
	Total	1,490	54.0			
Starling*		1,169	42.0	50	80.4 ± 0.8	68.5-92.9
Cowbird	♂	77		54	48.1 ± 1.1	43.1-54.3
	♀	12		12	39.1 ± 2.9	34.0-44.0
	Total	89	3.0			
Robin*		21	0.7	20	78.3 ± 1.1	72.0-92.0
Red-winged blackbird						
	♂	11		11	67.2 ± 3.7	58.5-70.7
	♀	1		1	46.4	
	Total	12	0.3			
Total, all species		2,781				

*Due to lack of time and inadequate storage facilities, these species were not sexed.

TABLE 2.
Comparison of species taken in two consecutive days of shooting (January 29-30, 1982) at 0630 hours in a blackbird roost, Denton, Texas.

Species	1st day	% of Total	2nd day*	% of Total
Common grackle	1,490	54.0	995	65.0
Starling	1,169	42.0	328	21.0
Cowbird	89	3.0	193	13.0
Robin	21	0.7	18	1.0
Red-winged blackbird	12	0.3	6	1.0
Total, all species	2,781		1,540	

*Due to the extreme weather conditions, these birds were not sexed (other than the red-winged blackbirds) or weighed.

CITY of DENTON, TEXAS MUNICIPAL BUILDING / DENTON, TEXAS 76201 / TELEPHONE (817) 566-8200

For the past few weeks, the City of Denton Animal Control has been waging a campaign against the birds that are roosting in your neighborhood. An harrassment program has been conducted every night in this neighborhood and, recently, a similar program has been conducted in the staging area northeast of the City. These programs have been only minimally effective.

Because of the limited success of these programs, the City Council of Denton has approved a maximum effort aimed at eliminating as many birds as possible and disrupting the roost as much as possible. This program will be started at 6:00 a.m. Friday, January 29, 1982, and be carried out by Denton Animal Control Officers armed with shotguns using LIVE ammunition. Due to this fact, we ask that you please take the following precautions:

1. Remain indoors during this effort;
2. Move your automobile into a covered area, move it out of the area shown below, or if this is not possible, cover it with blankets;
3. Move any breakables inside;
4. Stay away from windows.

The City of Denton Sanitation crews will be in the area to clean up killed and wounded birds immediately after the shoot.

This program will continue for several days, depending on the success of the effort Friday morning. The late afternoon harrassment program will also be continued during this time. You will be contacted as to the duration of the program.

Once again, this effort will begin Friday, January 29, 1982 in the area defined by the map below. If you have any questions, please contact the Animal Control Center between 8:00 a.m. and 5:00 p.m. at 566-8297.

Thank you very much for your cooperation.

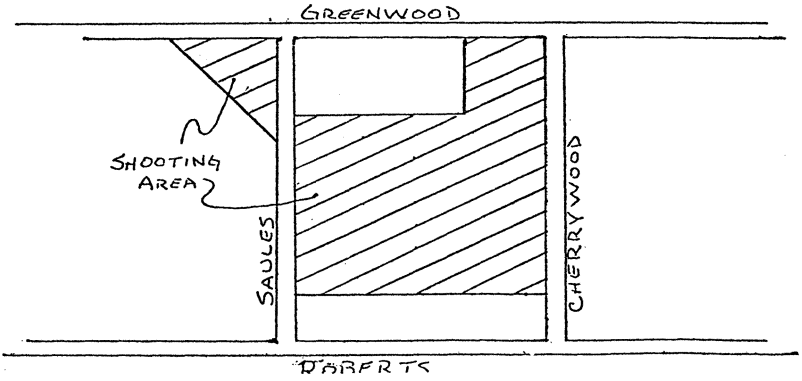

FIGURE 1. Information leaflet distributed to city residents living in or near an urban blackbird roost.